

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS
Significant Permit Modification

Pactiv LLC
Winchester, Frederick County, Virginia
Permit No. VRO81095
Effective Date: June 7, 2010
Expiration Date: June 6, 2015

As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Pactiv LLC has applied for a significant permit modification to the Title V Operating Permit for its extruded polystyrene foam production facility located in Winchester, Virginia. The Department has reviewed the application and has prepared a modified Title V Operating Permit.

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REQUESTED MODIFICATION

Pactiv LLC (Pactiv or the Company) operates an extruded polystyrene foam production facility in Winchester, Virginia. The facility produces industrial foam products for building underlayment and insulation. The facility also formerly produced disposable foam products for the consumer market such as plates, platters, bowls, trays and a variety of “take-out” type food containers (generically referred to as tableware), but this capability has been eliminated by the physical changes to the facility that are reflected in this significant modification. The basic operations at the facility include raw material receiving and handling, foam extrusion, roll storage, finished goods storage, and product reclaim.

Pactiv currently operates under the following two air permits issued by DEQ:

- Minor new source review (NSR) permit to operate and modify extruded polystyrene foam production facility dated November 23, 2011, as amended February 12, 2012 (an administrative amendment to reflect the Company’s name change from Pactiv Corporation to Pactiv LLC); and
- Title V operating permit dated June 7, 2010, as modified January 5, 2011.

The Valley Regional Office of the Department of Environmental Quality (DEQ) received a Form 805 air permit application from Pactiv dated February 29, 2012. The application requests modifications to the facility’s Title V operating permit that correspond to changes that were approved by DEQ in the minor NSR permit modification that was issued on November 23, 2011. The changes made in this recent minor NSR permit modification and requested for this Title V modification are described below.

REASON FOR MODIFICATION

As part of a company-wide restructuring, Pactiv has ceased manufacturing tableware products and now manufactures only building products at its Winchester facility. The company refers to this transition as Project ECO. The E-2 Line now produces only attic vent and roll stock (tableware is eliminated), and the E-3 Line has been converted from tableware/attic vent to underlayment and is redesignated as E-4. The previous and current descriptions of the facility’s four process lines are as follows:

Table 1: Summary of Modifications

Process Line	Prior to Modification	After Modification	Primary Changes
E-1	Underlayment	Underlayment	None
E-2	Tableware & Attic Vent/Roll Stock	Attic Vent/Roll Stock	Eliminate Tableware
E-3/E-4	Tableware & Attic Vent/Roll Stock	Underlayment	Conversion to Underlayment (renamed E-4)
E-6	Insulation Board	Insulation Board	None

Pursuant to the minor NSR permit dated November 23, 2011 (which subsequently has been amended on February 13, 2012) Pactiv is making the following specific changes to its facility in order to effectuate the changes in products that are described above. The majority of the physical changes are being made to the E-3 Line since it will produce a product (underlayment) that is significantly different from its current products (tableware and attic vent). Due to the magnitude of the changes, Pactiv has redesignated this line as E-4.

E-3 (E-4) foam extruder: The E-3 foam extruder (designated ES-22 in the permit) is being physically modified to produce underlayment instead of tableware and attic vent. The E-3 foam extruder is also being physically modified to allow for the use of both VOC and non-VOC blowing agents. A second co-extruder (designated ES-30a) is being added to accommodate underlayment production. The existing two laminators and one co-extruder will be removed and replaced with similar equipment that can produce underlayment; there is no increase in capacities for the replaced equipment.

E-3 (E-4) printer: The existing flexographic printer for the E-3 Line (designated ES-31) is being replaced by a new flexographic printer that can accommodate underlayment products (designated ES-117).

E-2 foam extruder: The E-2 foam extruder (designated ES-21) is being physically modified to allow for the use of both VOC and non-VOC blowing agents. The six thermoformers (ES-35 to 40) that are used only in the production of tableware have been removed, as the tableware process is discontinued. The two attic vent thermoformers (ES-41 and ES-214) remain in service because attic vent production continues on the E-2 line.

E-1 reclaim process: VOC emissions from the E-1 reclaim process are being re-routed so they can be controlled by the facility's existing regenerative thermal oxidizer (RTO). Previously, the reclaim streams from the E-2 and E-3 tableware manufacturing could not be commingled with the reclaim streams from the E-1 and E-6 building products manufacturing due to the different properties of the two reclaim streams. However, now that the facility will produce only building products, the E-1, E-2, and E-4 reclaim streams can be combined. Pactiv agreed to control the emissions from the E-1 reclaim process in order to reduce the facility's VOC emissions, which were necessary to avoid triggering PSD review for the modifications that were authorized in the minor NSR permit dated November 23, 2011 (as amended February 13, 2012).¹

Housewrap printing: Pactiv previously purchased pre-printed housewrap material that it repackaged and sold under its own brand. A new flexographic printer (designated ES-76) has been added that allows Pactiv to purchase unprinted housewrap material. A natural gas-fired dryer is also being added, but the dryer is exempt from permitting because it has a heat input rating of 2 million BTU/hr, which is well below the exemption threshold of 10 million BTU/hr. This project is independent from Project ECO, but at DEQ's request, Pactiv included it in the November 23, 2011 minor NSR permit because the resulting VOC emissions increase falls

¹ The engineering memorandum associated with the minor NSR permit dated November 23, 2011 includes a detailed discussion of the PSD netting analysis (this is included as Attachment B herein).

within the contemporaneous period for the Project ECO PSD netting calculation.

Earlier in 2011, DEQ processed two other Form 7 applications from Pactiv that are related to the change in product mix that is reflected in this permit action. First, in a letter-style minor NSR permit dated March 28, 2011, DEQ authorized Pactiv to conduct blowing agent substitution trials on the E-1 and E-2 Lines. Second, in an exemption letter dated April 6, 2011, DEQ authorized Pactiv to change the primary blowing agent used on the E-1, E-2, and E-3 (now E-4) lines from isobutane to n-butane.

The following changes were made from the minor NSR dated September 29, 2010, which was superseded by the permit dated November 23, 2011, as amended February 12, 2012. The condition numbers below refer to the minor NSR permit dated September 29, 2010, unless otherwise stated.

<u>Condition 1:</u>	The equipment list was updated to describe the equipment that is being added, removed, and modified.
<u>Conditions 2:</u>	The E-1 reclaim stream was added to the list of equipment that must be routed to the RTO for VOC control.
<u>Conditions 14-16:</u>	Since more than 12 months had passed since the previously-approved (in 2009) modifications to E-6 had been completed, the provisions for calculating emissions and throughput for the first 12 months after those modifications were removed from these three conditions.
<u>Condition 24:</u>	Separate VOC emission limits were established for E-1 Process emissions and E-1 Reclaim emissions in order to create an enforceable emissions reduction for the facility to use in the PSD applicability netting calculation to avoid PSD review.
<u>Conditions 30-38:</u>	All conditions that applied to both E-2 and E-3 are now applicable to only E-2, and all throughput and emission limits were revised accordingly.
<u>New Conditions 39-47:</u>	New conditions applicable only to the modified E-4 Line were established. These conditions mirror Conditions 30-38 that now apply only to E-2.
<u>New Condition 48:</u>	This condition requires that control of the E-1 Reclaim emissions – which were relied upon to net out of PSD – begins before operation of the modified E-4 line commences.

New Conditions 52-54, 57-58, 61-63, and 65hh-pp: The substantive provisions of the minor NSR permit dated March 21, 2003 for the three existing flexographic printers (ES-67, ES-115, and ES-116) were incorporated into the modified permit.

New Conditions 55, 59, 65ii, and 65ll: New VOC throughput and VOC emissions limits were established for the new flexographic printer for the E-4 line (ES-117), along with associated recordkeeping requirements.

Conditions 56, 60, 65jj, and 65mm: New VOC throughput and VOC emissions limits were established for the new flexographic printer for the new Housewrap Printing process (ES-76), along with associated recordkeeping requirements.

New Condition 66: An Initial Notifications condition was added to require notifications to DEQ for the modification of the E-3/E-4 Line.

New Condition 67: A Permit Invalidation general condition was added for the modifications that are approved in the modified permit for the E-3/E-4 Line.

Conditions 52-54 (now 76-78): The state-only enforceable throughput and emission limits for methanol were revised to reflect the newly-approved use of a blowing agent containing methanol as an impurity on the modified E-3/E-4 Line. These limits are now stated as facility-wide limits instead of applying to only specified process lines.

The existing Title V permit should be modified to incorporate the changes described above to the minor NSR permit, with the exception of new Conditions 66 and 67. Since these Initial Notifications and Permit Invalidation conditions have been satisfied, they do not need to be included in the modified Title V permit.

APPLICABILITY OF 9 VAC 5-80-230

According to 9 VAC 5-80-230, the significant modification procedures must be used for those permit modifications that do not qualify as minor permit modifications under 9 VAC 5-80-210 or as administrative amendments under 9 VAC 5-80-200. Pactiv's proposal does not meet the requirements for an administrative amendment or a minor permit modification. The Regulations further list the type of permit changes that require use of significant modification procedures. The changes proposed by Pactiv meet the following criterion, stated in 9 VAC 5-80-230.A.2:

*Significant modification procedures shall be used for those permit modifications that: ...
Require or change a case-by-case determination of an emission limitation or other
standard....*

Pactiv's requested Title V permit modification requires the establishment of revised emission limitations and standards through the incorporation of the new applicable requirements in the minor NSR permit dated November 23, 2011 (as amended February 13, 2012). Therefore, the requested changes to the permit must be processed as a significant permit modification.

CHANGES TO TITLE V OPERATING PERMIT

The changes made to the Title V permit are described below and include the requirements from the minor NSR permit dated November 23, 2011, as amended February 13, 2012. The condition numbers refer to the modified Title V permit unless otherwise noted.

<u>Company Name:</u>	The administrative amendment to the minor NSR permit dated February 13, 2012 reflected the recent name change for the company, from "Pactiv Corporation" to "Pactiv LLC". This change has been made throughout the modified permit.
<u>Structure of Permit:</u>	The existing permit sets forth conditions applicable to the E-2 and E-3 lines in section III, and conditions applicable to the E-1 and E-6 lines in section IV. The modified permit establishes separate sections for each process line as follows: section III (E-1), section IV (E-2), section V (E-4), and section VI (E-6). Sections V through IX of the existing permit are renumbered to VII through XI.
<u>Permit-wide:</u>	References to other Conditions within the modified permit are revised as necessary to reflect the changes described immediately above.
<u>Permit-wide:</u>	All citations to the previous NSR permits dated 9/29/10 and 3/21/03 are changed to the current NSR permit dated 2/13/12 that combines the provisions of both of these earlier permits. References to specific condition numbers of the NSR permit are revised as necessary.
<u>Section II:</u>	The Emission Units table is revised as necessary to reflect the units that have been removed (such as thermoformers and printers); units that have been added (two new printers); and units that now service different process lines (such as the fluff storage silos).

The E-1 Line (Underlayment)

Section III: Section III of the modified permit provides conditions applicable to the E-1 line (Underlayment). These conditions were in section IV of the existing permit, which set forth conditions for both the E-1 and E-6 lines. Section III of the existing permit provides conditions for both the E-2 and E-3 lines (which are relocated to sections IV and V in the modified permit).

Condition III.A.2: This condition is modified to establish separate VOC emission limits for E-1 Process Emissions and E-1 Reclaim Emissions.

Conditions III.A.3: Separate emissions calculations are established for E-1 Process Emissions and E-1 Reclaim Emissions.

Conditions III.A.10-13: Since VOC emissions from the reclaim process must now be controlled for the E-1 line, relevant conditions are added that mirror such conditions in the existing permit for the E-2 and E-3 (now E-4) lines.

Conditions III.C.: A new subsection C, entitled Compliance Assurance Monitoring, is added since the E-1 line is now controlled by the RTO. These conditions mirror those in the existing permit for the E-2 and E-3 (now E-4) lines.

The E-2 Line (Attic Vent/Roll Stock)

Conditions IV.A.: The IV.A. conditions are revised as necessary to reflect the separation of the E-2 and E-4 (formerly E-3) process lines into independent conditions.

Conditions IV.B.: Conditions that apply to fluff storage silos ES-64 – ES-66 are moved to Section VI, since those silos are now dedicated to the E-6 line.

Conditions IV.D.: The recordkeeping provisions are revised as necessary to apply to only the E-2 line.

The E-4 Line (Underlayment)

Condition V.A.: The section V.A. conditions are revised as necessary to

reflect the separation of the E-2 and E-4 (formerly E-3) process lines into independent conditions.

Condition V.A.10: This new condition requires control of the VOC emissions from the E-1 line reclaim stream to begin before the modified E-4 line can operate.

Conditions V.B.: Conditions that apply to fluff storage silos ES-64 – ES-66 are moved to Section VI, since those silos are now dedicated to the E-6 line.

Conditions V.D.: The recordkeeping provisions are revised as necessary to apply to only the E-4 line.

The E-6 Line (Insulation Board)

Section VI: Section VI of the modified permit provides conditions applicable to the E-6 line (Insulation Board). These conditions were in section IV of the existing permit, which set forth conditions for both the E-1 and E-6 lines. Section VI of the existing permit lists the insignificant emission units (which has now been renumbered to section VIII in the modified permit).

Conditions VI.A.1, 3, 4 & 5: The throughput and emissions calculation methodologies for the first twelve months of operation of the modified E-6 line are removed because that time span has passed.

Conditions VI.A.7 & 8: Both conditions are revised to show that three reclaim extruders now support the E-6 line.

Condition VI.A.11.: This existing condition is moved to Section VI of the permit because fluff storage silos ES-64 – ES-66 now serve only the E-6 line.

Facility-Wide Conditions

Section VII generally: Conditions in Section VII are revised as needed to reflect the removal of printer ES-31 and the addition of the new printers ES-117 and ES-76.

Conditions VII.A.4 & 7: The VOC throughput and VOC emission limits for the existing printers are reduced from 4.0 tpy to 3.0 tpy to reflect the removal of ES-31.

Conditions VII.A.5 & 6: VOC throughput limits are established for the new printers for the E-4 line (ES-117) and the Housewrap Printing process (ES-76).

Conditions VII.A.8 & 9: VOC emission limits are established for the new printers for the E-4 line (ES-117) and the Housewrap Printing process (ES-76).

Condition VII.B.3: Recordkeeping provisions are established for the two new printers (ES-117 and ES-76).

Section VIII: The two vacuum transfer blowers serving the E-6 line (ES-17 and ES-18) have been removed from the Insignificant Emission Units table and added to the table of permitted emission units in Section II because there is an applicable requirement for these units – see Condition VI.A.9 (establishing PM and PM-10 limits for certain materials handling units). This change in the permit is independent of the modifications being made at the facility (it is the correction of an error in the existing permit).

State-Only Enforceable Requirements

Conditions XI.A.1 & 2: The existing throughput and emission limits for methanol are increased from 27.6 tpy to 36.1 tpy, and their applicability is expanded from just the E-6 line to facility-wide since the blowing agent containing methanol will now be used on more than one process line.

Conditions XI.A.3 & B.1.: Both conditions are revised to reflect the facility-wide applicability of the methanol limits.

The monitoring, testing, and recordkeeping requirements are not changed for the emission units that are not being modified. The monitoring, testing, and recordkeeping requirements for the modified emission units are similar to those in the existing permit for the unmodified emission units. The monitoring, testing, and recordkeeping requirements – which satisfy EPA's requirements for periodic monitoring – are described in detail in the Statement of Basis for the most recent renewal of this operating permit, which is dated June 3, 2010.

Table 2 on the following page summarizes the VOC emission limits that apply to the facility. The total allowable VOC emissions from the facility are 609.4 tpy.

Table 2: VOC Emission Limits

Emission Unit ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description	Condition No.	VOC Emission Limit & Comments
ES-20	Foam Extruder E-1	1700 lbs of foam/hr	-	III.A.2	57.0 tpy E-1 Process only; E-1 Reclaim has separate limit (see ES-55); no control on E-1 Process
ES-21	Foam Extruder E-2	1250 lbs of foam/hr	-	IV.A.2	28.0 tpy E-2 Process & Reclaim; no control on E-2 Process (see ES-55 for E-2 Reclaim)
ES-22	Foam Extruder E-4	1700 lbs of foam/hr	-	V.A.2	50.4 tpy E-4 Process & Reclaim; no control on E-4 Process (see ES-55 for E-4 Reclaim)
ES-24	Foam Extruder E-6	4000 lbs of foam/hr	-	VI.A.2	111.0 tpy E-6 Process & Reclaim; no control on E-6 Process or E-6 Reclaim
ES-25, ES-25a, ES-26, ES-26a	Extrusion Line E-1 Laminators and Co-Extruders	-	-	III.A.7	0.11 lb/hr; 0.46 tpy no VOC control
ES-27, ES-28, ES-28a	Extrusion Line E-2 Laminators and Co-Extruder	-	-	IV.A.7	0.24 lb/hr; 0.25 tpy no VOC control
ES-29, ES-29a, ES-30, ES-30a	Extrusion Line E-4 Laminators and Co-Extruders	-	-	V.A.7	0.26 lb/hr; 0.48 tpy no VOC control
ES-32	E-2 Roll Storage Area	-	-	-	included in E-2 Process limit; no VOC control
ES-41 and ES-214	E-2 Thermoformers	-	-	-	included in E-2 Process limit; no VOC control
ES-33	Roll and Scrap Grinders including Storage Area	1000 lbs of product/hr	16.7 R95NG1 Regenerative	-	included in Reclaim limits for each line

Emission Unit ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description	Condition No.	VOC Emission Limit & Comments
	(serve E-1, E-2, E-4)	annual avg	Thermal Oxidizer		
ES-33a	Roll and Scrap Grinders including Storage Area (E-6)	1000 lbs of product/hr annual avg	-	-	no control; emissions included in E-6 Reclaim limit
ES-43 to -46, -48, -49	Fluff (Ground Scrap) Storage Silos (serve E-1, E-2, E-4)	2513 ft ³ each	16.7 R95NG1 Regenerative Thermal Oxidizer	-	included in Reclaim limits for each line
ES-42, -50, -51, -64 to -66	Fluff (Ground Scrap) Storage Silos (E-6)	2513 ft ³ each	-	-	no control; emissions included in E-6 Reclaim limit
ES-55	Reclaim Extruder R-2 (serves E-1, E-2, E-4)	-	16.7 R95NG1 Regenerative Thermal Oxidizer	III.A.2, IV.A.9, V.A.9	1.8 tpy (E-1 Reclaim); 0.69 tpy (E-2) and 0.69 tpy (E-4) (degradation emissions only, not BA)*
ES-52, ES-53, ES-54	Reclaim Extruders R-5, R-6, R-1 (serve E-6)	-	-	VI.A.8	0.28 lb/hr; 1.24 tpy E-6 Reclaim degradation emissions only, not Blowing Agent; no VOC control
ES-34, ES-58	Inside Finished Goods Storage Warehouses – E-1	-	-	III.A.2	208.2 tpy no VOC control
ES-34, ES-58	Inside Finished Goods Storage Warehouses – E-2	-	-	IV.A.2	15.2 tpy no VOC control
ES-34, ES-58	Inside Finished Goods Storage Warehouses – E-4	-	-	V.A.2	118.4 tpy no VOC control
ES-58	Inside Finished Goods Storage Warehouse – E-6	-	-	VI.A.2	10.1 tpy no VOC control
ES-114	VOC Blowing Agent Tank (serves E-1, E-2, E-4)	30,000 gallons	Pressure tank with inherent controls	-	de minimis – no limits

Emission Unit ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description	Condition No.	VOC Emission Limit & Comments
ES-110	Blowing Agent Tank (up to 3 percent methanol) (serves E-2, E-4, E-6)	18,000 gallons	Pressure tank with inherent controls	-	de minimis – no limits
ES-121	VOC Blowing Agent Storage Tank (E-6)	6000 gallons	Pressure tank with inherent controls	-	de minimis – no limits
ES-122	VOC Blowing Agent Storage Tank (E-6)	6000 gallons	Pressure tank with inherent controls	-	de minimis – no limits
ES-117	E-4 Flexographic Printer	1700 lbs of foam/hr	Low-solvent ink	VII.A.8	1.0 tpy
ES-67, ES-115, ES-116	Flexographic Printers (E-1, E-2, E-6)	varies	Low-solvent ink	VII.A.7	3.0 tpy
ES-76	Flexographic Printer (Housewrap)	7000 yards of Housewrap/hr	Low-solvent ink	VII.A.9	1.5 tpy

* Blowing Agent (BA) VOC emissions are included in the respective Process emission limits, so they are not separately accounted for at the Reclaim extruders. ... Prior to the modifications authorized in the 11/23/11 permit, Reclaim Extruder R-2 served only the E-2 and E-4 (formerly E-3) lines, and the VOC degradation product emissions limits for E-2 and E-4 were based on 8760 operation of R-2. In the 11/23/11 permit, Reclaim Extruder R-2 now also handles the E-1 line, but separate VOC degradation product emission limits were not established for E-1 because the existing limits for E-2 and E-4 already account for the maximum operation of Reclaim Extruder R-2.

PUBLIC PARTICIPATION

The public participation requirements of 9 VAC 5-80-270 apply to significant permit modifications. A public notice regarding the draft permit was placed in the Winchester Star, Winchester, Virginia, on May 31, 2012. EPA was sent a copy of the draft permit and notified of the public notice on May 24, 2012. West Virginia, Maryland, and Pennsylvania, the affected states, were sent a copy of the public notice in an e-mail dated May 31, 2012. All persons on the Title V mailing list were also sent a copy of the public notice via e-mail dated May 31, 2012. The public comment period extended from June 1, 2012 through June 30, 2012.

No comments were received from the public or the affected states. Comments were received from EPA on June 19, 2012. DEQ responded to those comments on July 9, and on July 16 EPA confirmed that its concerns had been resolved. The only changes made to the draft permit in response to EPA's comments is inserting the "operated in accordance with...manufacturer's written requirements or recommendations" language into the Periodic Monitoring sections for the fabric filters for the E-1, E-2, and E-4 lines. See specifically Conditions III.B.1, IV.B.1., and V.B.1. This language was inadvertently omitted from the draft permit when certain fluff storage silos were redesignated to serve different process lines. EPA's comments and DEQ's responses are included in Attachment C.

ATTACHMENTS

Attachment A – Minor New Source Review Permit dated November 23, 2011, as amended February 12, 2012

Attachment B – Engineering Memorandum for the Minor New Source Review Permit dated November 23, 2011

Attachment C – EPA's Comments on Draft Permit and DEQ's Responses

ATTACHMENT C

EPA's Comments on Draft Permit and DEQ's Responses